

Albrecht, B.

S/N: 10/709,835

In the Claims

What is claimed is:

1-15 (Cancelled)

16. (Currently Amended) A method of generating a weld power from alternate power supplies ~~performing a welding type process~~ comprising the steps of:
generating a weld power from an input power supplied by initiating a welding-type process from an energy storage device;
starting a fossil fuel driven engine upon generation of the weld power~~power source~~; and
upon completion of starting the fossil fuel driven engine~~power source~~, automatically switching-transferring the supplied input power from the energy storage device to a power delivered from the fossil fuel driven engine without interruption of the weld power~~welding type process from the energy storage device to the fossil fuel driven engine power source~~.

17. (Currently Amended) The method of claim 16 wherein the step of generating the weld power from an input power supplied by an energy storage device ~~initiating the welding type process from the energy storage device~~ and the step of starting of the fossil fuel driven engine ~~power source~~ occur substantially simultaneously.

18. (Currently Amended) The method of claim 16 further comprising the step of charging the energy storage device from the power delivered from the fossil fuel driven engine ~~power source~~.

19. (Currently Amended) The method of claim 18 wherein the step of charging the energy storage device is performed when the weld power is not being generated~~ing type process is not operating~~.

20. (Currently Amended) The method of claim 16 further comprising the step of detecting a signal provided by the fossil fuel driven engine ~~power source~~ to determine completion of starting of the fossil fuel driven engine~~the startup process~~.

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21. (Currently Amended) The method of claim 16 further comprising the steps of monitoring the generation of the weld power and upon detecting a break in the generation of the weld power~~welding-type process, disabling-shutting down the fossil fuel driven engine-power source~~.

22. (Currently Amended) A welding-type apparatus comprising:
~~a welding-type apparatus housing;~~
an engine driven generator;
a converter connected to the engine driven generator and configured to generate a welding-type power~~an engine driven power source configured to supply electrical power and arranged substantially within the welding-type apparatus housing; and~~
an energy storage device connected to the converter~~engine driven power source~~ and configured to generate the welding-type power until the output of the engine driven generator is sufficient to provide the welding-type power~~supply power for a welding-type process alternately with the engine driven power source.~~

23. (Currently Amended) The apparatus of claim 22 further comprising a power source controller configured to selectively drive a welding-type process from at least one of the engine driven ~~power source~~generator and the energy storage device.

24. (Currently Amended) The apparatus of claim 23 wherein the power source controller is configured to switch an electrical configuration of the welding-type apparatus to drive the welding-type process from the energy storage device during an initialization period and from the engine driven ~~power source~~generator during a post-initialization period.

25. (Currently Amended) The apparatus of claim 24 wherein the initialization period includes an engine start-up period of an engine of the engine driven power source~~generator~~.

26. (Original) The apparatus of claim 24 wherein the power source controller is configured to automatically switch the electrical configuration of the welding-type apparatus without interrupting the welding-type process.

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27. (Currently Amended) The apparatus of claim 23 further comprising a sensor configured to detect a signal indicative of an output delivered by the engine driven ~~power source~~generator.

28. (Currently Amended) The apparatus of claim 27 wherein the power source controller is configured to receive feedback from the sensor and to switch an electrical configuration of the welding-type apparatus to drive the welding-type process from the engine driven ~~power source~~generator upon receiving feedback from the sensor.

29. (Currently Amended) The apparatus of claim 23 wherein the engine driven ~~power source~~generator includes an engine configured to drive ~~at the engine driven~~ generator during operation and wherein the power source controller is configured to cease operation of the engine upon detecting a break in the welding-type process.

30. (Currently Amended) The apparatus of claim 29 wherein the engine driven ~~power source~~generator is configured to supply electrical power to deliver a charging power to the energy storage device during operation of the engine.

31. (Currently Amended) The apparatus of claim 23 wherein the power source controller is configured to drive the welding-type process from the energy storage device and to switch an electrical configuration of the welding-type apparatus to drive the welding-type process from the engine driven ~~power source~~generator upon detecting a voltage drop of the energy storage device below a threshold.

32. (Original) The apparatus of claim 23 wherein the welding-type process is one of a metal inert gas (MIG) welding-type process, tungsten inert gas (TIG) welding-type process, a shielded metal arc welding (SMAW) welding-type process, a plasma-cutting process, an induction heating process, and an aircraft auxiliary charging process.

33. (Currently Amended) The apparatus of claim 22 wherein the engine driven ~~power source~~generator is configured to charge the energy storage device during a break in the welding-type process.

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34. (Currently Amended) The apparatus of claim 22 wherein the energy storage device is configured to drive a welding-type process and the engine driven ~~power source~~generator is configured to charge the energy storage device.

35. (Currently Amended) The apparatus of claim 22 wherein the engine driven ~~power source~~generator and energy storage device are configured to deliver auxiliary power.

36. (Currently Amended) A welding-type power source comprising:
a housing;
an internal combustion engine disposed in the housing;
a generator ~~disposed in the housing~~ operatively connected to the internal combustion engine and configured to deliver a desired welding-type power; and
an energy storage device rechargeably connected to the generator and configured to deliver the desired welding-type power over a given ~~until an output of the generator is sufficient to deliver the desired welding-type power~~duration.

37. (Original) The welding-type power source of claim 36 wherein the generator is further configured to deliver an auxiliary power.

38. (Currently Amended) The welding-type power source of claim 36 wherein the generator is configured to deliver the welding-type power after a predetermined duration of delivery of the desired welding-type power by the energy storage device ~~upon an expiration of the given duration.~~

39. (Currently Amended) The welding-type power source of claim 38 wherein the predetermined duration is defined as the time between a trigger actuation and the internal combustion engine achieving a desired operation speed ~~given duration corresponds to a duration of a welding-type process.~~

40. (Currently Amended) The welding-type power source of claim 36 wherein the ~~generator and the energy storage device are configured to deliver welding type power substantially simultaneously upon initiation of a welding type process~~ the desired welding-type

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power is maintained such that a welding-type process is uninterrupted during switching of the source of the desired welding-type power between the energy storage device and the generator.

41. (Currently Amended) The welding-type power source of claim 36 ~~wherein the energy storage device is disposed within the housing~~⁴⁰ wherein the switching of the source of the desired welding-type power is performed automatically.

42. (Currently Amended) The welding-type power source of claim 36 further comprising a controller configured to switch an electrical configuration of the welding-type power source to deliver power from one of the generator and the energy storage device to provide the desired welding-type power.

43. (New) A dual source individually and cooperatively powered welding-type device comprising:

a power supply constructed to receive a power signal and configured to generate a desired weld power from the power signal;

an engine connected to a generator, the generator connected to the power supply and constructed to provide the power signal;

a battery connected to the power supply and constructed to provide the power signal; and

a controller connected to the power supply and constructed to switch a source of the power signal between the generator and the battery based on an operating condition of the engine.

44. (New) The welding-type device of claim 43 wherein the generator is connected to battery to recharge the battery during non-generation of the desired weld power.

45. (New) The welding-type device of claim 43 wherein the operating condition of the engine is further defined as full-engine speed.

46. (New) The welding-type device of claim 43 wherein the controller is configured to automatically start the engine upon initial generation of the desired weld power from the power signal provided by the battery.

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47. (New) The welding-type device of claim 43 wherein the desired weld power is one of a shielded metal arc welding power, a tungsten inert gas weld power, a metal inert gas weld power, and a plasma cutting power.

48. (New) The welding-type device of claim 43 further comprising a housing constructed to enclose the engine, battery, and power supply such that the battery supply is incapable of generating the desired weld power if removed from the housing.

49. (New) The welding-type device of claim 43 wherein the controller is further configured to suspend operation of the engine upon termination of a welding process.

50. (New) The welding-type device of claim 44 wherein the controller is further configured to maintain an operating condition of the engine upon termination of a welding process for a duration required to recharge the battery from the power signal provided by the generator.